

MEASLES UPDATE

National Immunization Program (NIP), Centers for Disease Control & Prevention Measles Activity in U.S. through Week 14 (April 9, 2005)

No. of confirmed measles cases reported to MMWR by Week 14, 2005:	7
No. of confirmed measles cases reported to NIP by Week 14, 2005:	8
No. of confirmed measles cases reported for same period in 2004:	12
Total No. of U.S. outbreaks (3 or more linked cases) in 2005:	0

As of Week 14 (week ending April 9, 2005) 7 measles cases had been reported for the Morbidity and Mortality Weekly Report (MMWR) via NETSS compared to 8 confirmed cases reported to the National Immunization Program (NIP). All confirmed measles cases are listed by date of rash onset in the Table on page 2. NIP is aware of 8 confirmed cases from 4 states: Arizona - 1; New York State - 1; New York City - 3; Oregon - 2; Wisconsin - 1. All measles cases reported to date have been international importations. The source countries reported were: Armenia (1 case imported); India (2 cases imported); Indonesia (1 case imported); Egypt/Saudia Arabia (2 cases imported); Thailand (1 case imported); and Germany (1 case imported). Note regarding the "7" measles records reported for MMWR via NETSS: New Jersey transmitted 2 measles records in error that they plan to delete; Florida has one error record that will be deleted; Oregon cases (2 imports) have not yet been reported officially; nor have the recently reported cases from Wisconsin (1 import from Germany) and New York City (1 import from Thailand).

Confirmed measles cases reported to date:

NEW YORK CITY - 3 imports reported

The first measles case of the year was an importation from **Indonesia** in an 11-month-old Brooklyn resident, rash onset January 2. The case returned to Newark, New Jersey one day prior on January 1 after a 30 day stay in Indonesia. The flight was Malaysian Airlines #MH0090 from Malaysia via Sweden arriving in Newark on January 1, 2005. No spread cases were identified.

In Week 2, New York City reported an imported case from **India**, rash onset January 10, 2005. The case was a 70-year-old Manhattan resident, who returned on January 5 after a 2-week visit to India. Five days later on January 10, the case developed fever and maculopapular rash, which started on the face then spread to the entire trunk. No cough, coryza or conjunctivitis were reported. CDC lab also reported IgM positive and IgG positive results. The patient was discharged from the Manhattan Hospital 2 days later; no complications. He was isolated during admission and was given a single occupancy room. He recalled having had measles disease as a child. Specimens were obtained and shipped to CDC for virus isolation and typing. Results were PCR positive; genotype D8.

In Week 13, New York City reported (to NIP) an imported measles case from **Thailand**. The case was IgM positive by Quest and also by CDC. The case was a 40-year-old male, rash onset March 3, 2005. He returned from a 2-week trip in Thailand on March 1, 2005. On March 3rd, patient developed cough, conjunctivitis and maculopapular rash, which started on face then spread to entire trunk. On March 7th he visited a Manhattan private physician's office and tested IgG negative for measles. No IgM test was done during that visit and patient was not isolated. On March 29th he saw another private physician in Manhattan and tested IgM positive and IgG positive for measles. There were no susceptible household contacts. According to patient he had not been vaccinated. The clinical specimens obtained for viral isolation were unsuccessful.

ARIZONA – 1 import reported

Maricopa County reported positive measles IgM for a 28-year-old male from Yerevan City, **Armenia**. The 28-year-old was a visiting scholar at AZ State University in Tempe, arriving January 7, 2005. Flu-like symptoms (fever up to 102, cough and conjunctivitis) began on January 13, followed by onset of rash, January 17. The patient reported no history of measles disease or vaccination. He first sought medical treatment on January 18 at an urgent care facility; then to a Hospital Emergency Room. Following laboratory confirmation; press release, blast faxes, and email alerts were sent to students, ER's, ICPs and primary care physicians. The large university in Phoenix implemented a 2-dose MMR requirement prior to school entry in 1997. The enrollment is more than 50,000 students as well as 8,000 staff. NIP's Global Immunization Division notified WHO. Nasopharyngeal swab and urine specimens were positive by PCR at CDC. The measles genotype was D6 (CDC has had isolates of virus from this genotype from Russia). No additional cases were identified.

NEW YORK STATE - 1 import reported

Westchester County reported one IgM positive measles infection imported from **India**. The unimmunized 12-month-old male (U.S. resident) returned from India on February 22 then rash onset 4 days later on **February 26**. The child met clinical case definition with cough, coryza, fever 103+, and Koplik's were also observed. He had been treated for pneumonia while in India and had been on a series of antibiotics prior to his departure. Both parents had histories of measles disease. The County collected urine and throat culture specimens on March 3. They also followed up with potential contacts in the physician's office and medical facility where the child had been treated. CDC was successful in sequencing and the genotype was D8. Of interest, when compared to other recent D8s, this D8 was very similar--only one change away--from the D8 sequenced in an imported case in Massachusetts in 2004 (MA day-care case with rash onset June 30, 2004). The Westchester D8 was not similar to the most recent D8 sequenced (from the NYC import from India in the 70-year-old case with rash onset January 10, 2005).

OREGON - 2 imports reported

On March 4, 2005, Oregon posted Epi-X and did a press release regarding 2 confirmed measles cases in Portland (1) and nearby Multnomah County (1). Case #1 was a 33-year-old foreign-born male imported from **Egypt or Saudi Arabia**. He traveled to Cairo and to HAJJ in Saudi Arabia over the month of January. He has lived in Portland for over a year and attends Portland State University. He was hospitalized and diagnosed as having leptospirosis. His rash began **February 11** after returning from Cairo on February 1. He recalled vaccination as a child in Egypt and his immunization record at the University indicated 2 dates for vaccine at 11 months and 12 months of age. Case #1 was discovered after a **second** case was reported (his brother). Case #2 (35-year-old foreign-born brother to #1) could have been infected by his brother or had same exposure since he too had traveled to Egypt and Saudi Arabia with his brother (slightly different schedules); so both are classified as imported cases. Case #2 was also hospitalized, onset **February 18**. He also recalls vaccine as a child in Egypt but lacked documentation. It was too late to collect viral specimens. No other cases were identified.

WISCONSIN – 1 import and 1 new suspect

One measles case was recently reported in a resident of Eau Claire, Wisconsin. The 47-year-old unimmunized male was in Frankfurt, **Germany** March 17 – March 29. His rash began on face on April 3rd moving from head to trunk. Symptoms included red sensitive eyes, Koplik's spots; sore throat, joint pain, extreme fatigue, diarrhea, cough, fever of 102.9. He was hospitalized on April 5. The blood drawn on April 6 was negative. A serum drawn on April 8 was measles IgM positive and IgG negative. The State issued a press release and blast faxes to hospitals and local medical providers. Contacts from his workplace, church and the hospital were all identified. NEWS: One unimmunized 15-year-old with rash onset April 16 has been identified as a direct contact to the confirmed case. This contact's immunization record was checked when he was initially identified as a contact. The dates given for MMR on a health form were determined to be incorrect and the individual was unimmunized. When it was determined the contact had not been immunized, the individual was isolated. Prodromal symptoms began 2 days after isolation procedures were implemented. Serum and viral specimens from the contact are being collected and forwarded to CDC on April 20.

Canada imports one case of measles from the U.S. (rash onset April 6, 2005):

April 11, 2005 -- from our Canadian colleagues in VPD Surveillance in Ottawa Ontario: A case of measles was detected in Canada in a 12-year-old child from British Columbia. She had onset of fever on April 2, 2005 while en route home from the U.S. She arrived home April 3; with rash onset April 6. Her travel history was by automobile/camper through western U.S. on March 20-April 3. Exposure period indicates the child likely acquired infection in one of the three theme parks visited while in California. Her lab result was IgM positive for measles and she was described as having rash which spread from face to neck, then trunk to extremities, becoming confluent. She had Koplik's spots and bilateral posterior cervical adenopathy. The family left home on March 20 with roadside stops at overnight campgrounds, where they kept to themselves along the way. Viral specimens were obtained and are being processed in Canada.

U.S. MEASLES cases (N=8) reported by rash onset date:
CASES IN BOLD ARE RECORDS SENT SINCE Previous MEASLES UPDATE

#	Proj	Age /dob	Rash onset Date	Vacc	Spread Cases?	Reported To MMWR?	Viral Specimens Received	MEASLES as of April 16, 2005 Comments / Source Information
01 imp	NYC	11 mo old	1/2/05	No	No	Yes	Yes, D9	Single IMPORT , Brooklyn resident returning after 1 month family's visit to Indonesia.

#	Proj	Age /dob	Rash onset Date	Vacc	Spread Cases?	Reported To MMWR?	Viral Specimens Received	MEASLES as of April 16, 2005 Comments / Source Information
02 imp	NYC	70 yr old male	1/10/05	No	No	Yes	Yes, D8	Single IMPORT, India U.S. resident
03 imp	AZ	28 yr old male	1/17/05	No	No	Yes	Yes, D6	Arrived 1/17 from Armenia Foreign visitor
04 imp	NYS	12 mo old male	2/26/05		No	Yes	Yes, D8	Westchester County resident Returned from India on 2/22/05
05 imp	OR	33 yr old male	2/11/05	Yes	Possibly	No	No	Import in foreign born college student returning from trip to Cairo/Saudi Arabia on 1/29/05 ; could have infected brother below; vaccinated in Egypt at 11 mos and 12 mos. Resident in U.S. for over 1 year
06 trac	OR	35 yr old male	2/18/05	Unk	No	No	No	Import from Cairo/Saudi Arabia Verbal history of vaccination while a child in Egypt; no documentation. Traveled w/brother above. Residing in U.S. for over 1 year
07 imp	NYC	40-year-old male	3/3/05	No	No	No	Yes, unsuccessful	Import Thailand; foreign born U.S. resident; returned to U.S. on 3/1/05
08 imp	WI	47 yr old male	4/3/05	No	No	No	No	U.S. resident, import from Frankfurt, Germany. Went to Germany on 3/17; returned to U.S. on 3/29. Prodromal 3/31. One unimmuniz contact w/symptoms Is pending lab work. Virals collected.

Visit REVB's Molecular Surveillance Website at:
<http://www.cdc.gov/ncidod/dvrd/revb/measles/index.htm>

US Genotyping Results 2005

State	First & last rash date	Geno type	Comments	No. cases identified
AZ	1/17/05	D6	Import: Armenia	1
NYC	1/10/05	D8	Import: India	1
NYC	1/2/05	D9	Import: Indonesia	1
NYS	2/26/05	D8	Import: India	1

Please go to next page for summary of *Rubella and Mumps* morbidity in the U.S. as of Week 14, 2005.

Week 14 – Rubella, CRS & Mumps in the U.S.

April 16, 2005

Rubella - The total rubella reported to MMWR through Week 14 remains 4 cases compared to 7 cases for same period last year. NIP is aware of **5 confirmed rubella in U.S. to date. Maryland** reported one case in a vaccinated 25-year-old female (not pregnant), onset 1/31/05. Symptoms included fever of 101, 4 day rash and lymphadenopathy. Source of infection was unknown, no travel or visitors. The individual showed immunity (IgG positive), but the IgM came back positive

as well. No specimens could be sent to CDC for retesting. The second case in NETSS is a false positive in Middlesex County, **Massachusetts** that the State **plans to delete**. CDC Rubella Lab results were: IgG positive, IgM equivocal on acute sample; IgG positive, IgM negative (but very high negative) on convalescent sample. There was no IgG rise between the samples taken about 2 weeks apart. Final diagnosis for patient was *pruritic urticarial papules* in pregnancy. The 3rd and 4th rubella cases in NETSS are cases reported by **Michigan** and **Maryland**. Michigan reported a 27-year-old pregnant female (gestation unknown) who arrived from Vietnam in July. Import status for the case is uncertain at this time. Her IgM was done as part of prenatal screening so report was based on the positive IgM. She denied any illness and her immunization history was unknown. Language was a problem, a repeat serology was suggested. A public health nurse in Michigan is following the pregnancy for outcome and learned that the testing was done, at least in part, because the prenatal provider noted growth and development problems with the fetus. The 4th rubella record sent via NETSS was an IgM positive case from **Maryland** (Prince George's Co.) in an 8-year-old vaccinated female with rash onset January 6. No travel and no visitors reported.

New rubella import reported to NIP this week: Suffolk County, **New York** confirmed rubella in an unimmunized 47-year-old male resident, rash onset 3/21/05. He had returned from *Paris, France* about 2 weeks prior to onset. A private physician diagnosed rubella on first visit (March 21) and drew blood that day with negative results. The second serology drawn April 7 was IgM positive. Symptoms included rash on face spreading downward, malaise, swollen glands, joint pain, eye irritation. Case was quarantined after initial visit to doctor but had been to work a couple of days prior while he was infectious so letters were sent to co-workers. No pregnant women were exposed in the workplace. No susceptible individuals were found in the doctor's office and his wife and 3 children were immune.

Rubella, Congenital Syndrome (CRS)

The current total for CRS in Week 14 is 1 case compared to 0 cases for same period last year. The 2005 report is a child born in New Hampshire on November 4, 2004. This 10-week old infant had congenital cataract, patent ductus arteriosus, congenital heart disease; hearing loss, microcephaly, enlarged spleen, enlarged liver; and failure to thrive. Parents were Liberian refugees who came to the U.S. in February 2004 (they had been in **Abidjan, Ivory Coast** where rubella was occurring). The 25-year-old mother was vaccinated with rubella-containing vaccine on March 1--very early in her pregnancy. Date of mother's first prenatal care in U.S. was April 9 (her 3rd child). CDC received clinical samples (throat swab and urine) and serum. The virus was not vaccine virus. Results from direct RNA extraction and RT-PCR were positive. The strain was closely related to the Uganda sequence.

Mumps

Two new mumps cases were reported to MMWR in Week 14. The first record was from NYC in a 35-year-old male, source of infection was *Romania*. The case-patient had parotitis on March 5 and was laboratory confirmed. Vaccination history was unknown. The other new case reported to MMWR was from Iowa; a 19-year-old male with event date 3/21/05. The current total for mumps reported to MMWR to date is 62 cases reported (from 21 grantees) compared to 53 cases for same period of 2004. Twenty-eight (45%) of cases are <15 years of age. For the 46 cases (74%) where case status is known, 25 are confirmed and 21 are probable. Of the 25 confirmed; 10 (40%) were laboratory confirmed. Of the 28 cases (44%) with known importation status; 24 are indigenous and 4 are imported. Of the 15 cases (24%) with known vaccination status, 13 were vaccinated and 2 were unvaccinated. Of the 39 (63%) of cases where race is known, 31 are White, 5 are Asian, and 2 are African American and 1 is other. Of the 32 cases where Hispanic ethnicity is known, 3 are Hispanic.

New Mumps case reported to NIP on April 15: NYC reported one case of imported mumps in a 17-year-old student visiting from the *United Kingdom* with a student group from South Yorkshire, *England*. The case-patient did not travel back to U.K. on April 15 with the rest of the group. She was quite ill and was advised not to travel until no longer infectious (9 days post onset of parotitis). Her 57 co-travelers (who may have been exposed) departed NYC for the U.K. on April 15. New York City notified the Department of Health and the Health Protection Agency in England. Viral specimens received at CDC were unsuccessful.

Michigan will report one confirmed mumps case in a 19-year-old male college student as imported from *Ireland*. He was a secondary case (or so it appeared) to a dorm suite-mate who had onset about 2.5 weeks prior. The initial case (also a 19-year-old male) had been traveling in Ireland a few weeks before his onset on January 22, 2005; he had compatible clinical illness, was mumps IgM positive, and there were known cases occurring in the area of Ireland he visited. The conundrum came with the second case: he had compatible illness (parotid swelling onset February 9, 05), but was mumps IgM negative on February 9 and February 28 (mumps IgG positive on both occasions). On the basis of the IgM results, Michigan would ordinarily consider this case a rule out, but the exposure history was compelling so a viral specimen (nasal pharyngeal swab) was sent to CDC. The NP sample from the secondary (suspect) case, obtained February 11, 2005 was negative by direct RT-PCR for mumps.

Montana sent mumps viral specimens to CDC in January --on a father diagnosed with mumps orchitis 2 weeks prior who had an 11 month old child with non-specific URI symptoms. The State was unable to obtain serum on the baby but did obtain urine, throat swab and salivary specimens. These were negative by PCR at CDC. Serum on the father (drawn Jan 19) was re-tested at CDC and IgM was indeterminant. According to a reference lab, the father's serum drawn on January 6 was mumps IgM positive at 1:40 and mumps IgG positive at 1:64. Current Status: Father POS mumps and Child remains unknown (excluded from day-care until end of possible incubation period).

NIP is aware of a total of 6 imported mumps cases in 3 states this year: Michigan will report the one confirmed mumps case in a 19 y.o. college student imported from **Ireland**, onset January 22, 2005. Three imports have been reported via NETSS by **Hawaii** with one record listing source country as **Japan** --other 2 were unknown at the time of this report. Two mumps imported cases will be reported by NYC from **Romania and England**.

Please send questions or comments to Dr. Charles LeBaron , Team Leader for MMR Activity at NIP; or to Ms. Susan B. Redd at sbr1@cdc.gov; fax (404) 639-8665 or ph (404) 639-8763. We appreciate being informed of measles, rubella or mumps activity in your project area.